

SLAC National Accelerator Laboratory, Menlo Park, CA, United States
Physical Science Research Professional, High Energy Density Science Division **2020 – 2021**
Visiting Scientist, High Energy Density Science Division **2015 – 2019**

Investigating laser-driven ion acceleration and magnetic field generation mechanisms in high-intensity laser plasma interactions. Development of high-repetition rate targetry for high energy density science experiments. Planning and executing experiments (>30) in the Matter in Extreme Conditions (MEC) endstation at the Linac Coherent Light Source (LCLS), the Titan laser at Lawrence Livermore National Laboratory (LLNL), the FLASH Free-electron Laser at the Deutsches Elektronen-Synchrotron (DESY), the Texas Petawatt Laser Facility at the University of Texas at Austin, the Advanced Beam Laboratory at Colorado State University, and the Draco 150 TW and Petawatt lasers at Helmholtz-Zentrum Dresden-Rossendorf (HZDR).

University of Texas at Austin, Austin, TX, United States **2016 – 2019**
Visiting Researcher at the Center for High Energy Density Science
 Hosted by: Prof. Todd Ditmire, Department of Physics

Studying hybrid laser-driven proton acceleration mechanisms using planar cryogenic low-Z jets focusing on the proton beam energy and flux, stability, and reproducibility. Generation of high-flux, quasidirectional laser generated neutron sources. Prepared University Subcontract Award between SLAC and UT Austin for procurement of liquid helium.

University of Alberta, Edmonton, AB, Canada **2013 and 2014**
Undergraduate Summer Research Assistant
 Supervised by: Prof. Robert Fedosejevs, Department of Electrical & Computer Engineering

Performing high energy density laboratory plasma experiments with the Titan laser at LLNL. Development of streaked optical and near-infrared spectrometers to diagnose back-scattered laser light from shock ignition inertial confinement fusion plasma conditions. Investigating early-time plasma expansion (pre-plasma) during high-intensity laser-plasma interactions using interferometry and proton radiography in collaboration with the University of California San Diego.

McGill University, Montréal, QC, Canada **2013 – 2014**
Undergraduate Honours Thesis
 Supervised by: Prof. Jack Sankey, Department of Physics

Development, automation, and analysis of cavity ringdown spectroscopy measurements for quantum optomechanics experiments.

Teaching Experience

- **U. S. DOE Science Undergraduate Laboratory Internships (SULI) program** **2021**
Mentor, 2 students
- **U. S. DOE Science Undergraduate Laboratory Internships (SULI) program** **2018**
Mentor, 1 student
- **McGill Physics Help Desk** **2013**
Program Coordinator and Undergraduate Physics Tutor
- **McGill Department of Mathematics** **2012 – 2013**
Course Assistant, MATH 150/151 Honours Accelerated Calculus A/B
- **Astrophysics McGill** **2012 – 2014**
Public Outreach Volunteer and Instructor at Secondary Schools

Scholarly Activities

- **2023 LaserNetUS Data & Diagnostics Workshop**, Fort Collins, CO, United States **2023**
Conference Organizer
- **2023 LaserNetUS Users' Meeting**, College Park, MD, United States **2023**
Conference Co-Chair
- **LaserNetUS Cycle 5 Proposal Review Meeting**, Rockville, MD, United States **2023**
Meeting Co-Chair
- **Basic Research Needs Workshop on Inertial Fusion Energy**, Virtual **2022**
Local Organizing Committee Chair
- **2022 LaserNetUS Users' Meeting**, Fort Collins, CO, United States **2022**
Conference Co-Chair

	- National Academy of Science Assessment of High Energy Density Physics , <i>Supporter on 1 white paper</i>	2021
	- APS DPP Community Planning Process , <i>Advocate on 1 white paper</i>	2020
	- 9th International Workshop on Warm Dense Matter , Vancouver, BC, Canada <i>Organizing Committee Member</i>	2016 – 2017
	- 43rd IEEE International Conference on Plasma Science , Banff, AB, Canada <i>Organizing Committee Member</i> <i>Volunteer Coordinator</i>	2015 – 2016 2016
	- McGill Society of Physics Students <i>President</i> <i>Vice President of Academic Affairs</i>	2013 – 2014 2012 – 2013
	- McGill Faculty of Science Committees <i>Faculty Committee Undergraduate Physics Representative</i> <i>Student Standing Committee Student Representative</i> <i>Academic Committee Student Representative</i>	2013 – 2014 2012 – 2013 2012 – 2013
Peer-Review Activities	- U. S. Department of Energy , <i>2 proposals</i> - Physics of Plasmas , <i>1 article</i> - Quantum Beam Science (QuBS) , <i>1 article</i> - New Journal of Physics (NJP) , <i>2 articles</i> - Plasma Physics and Controlled Fusion (PPCF) , <i>6 articles</i> - Journal of Instrumentation (JINST) , <i>3 articles</i>	2023 2023 2022 2020 2019 – 2022 2019 – 2020
Research Interests	Ultra-intense laser plasma interactions, high energy density physics, plasma physics, warm dense matter, plasma and charged particle diagnostics	
Author-level Metrics	32 publications indexed in the Web of Science. Sum of times cited: >635; h-index: 10	
Peer-reviewed Publications	<ol style="list-style-type: none"> 1. M. Rehwald <i>et al.</i>, <i>Ultra-short pulse laser-driven acceleration of protons to 80 MeV from density tailored cryogenic hydrogen jets</i>, Nature Communications, (accepted). 2. B. Loughran <i>et al.</i>, <i>Automated control and optimisation of laser driven ion acceleration</i>, High Power Laser Science and Engineering, 11, e35, (2023). 3. N. Xu <i>et al.</i>, <i>Versatile tape-drive target for high-repetition rate laserdriven proton acceleration</i>, High Power Laser Science and Engineering, 11, e23, (2023). 4. X. Jiao <i>et al.</i>, <i>High deuteron and neutron yields from the interaction of a petawatt laser with a cryogenic deuterium jet</i>, Frontiers in Physics 10, 964696 (2023). 5. H. Sawada <i>et al.</i>, <i>Ultrafast time-resolved 2D imaging of laser-driven fast electron transport in solid density matter using an x-ray free electron laser</i>, Review of Scientific Instruments, 94, 033511 (2023). 6. M. Rehwald <i>et al.</i>, <i>Towards high-repetition rate petawatt laser experiments with cryogenic jets using a mechanical chopper system</i>, Proc. 13th Int. Particle Accelerator Conf., 1598, (2022). 7. F. Treffert, G. D. Glenn <i>et al.</i>, <i>Ambient-temperature liquid jet targets for high-repetition-rate HED discovery science</i>, Physics of Plasmas 29, 123105 (2022). 8. S. Pandolfi <i>et al.</i>, <i>Novel Fabrication Tools for Dynamic Compression Targets with Engineered Voids Using Photolithography Methods</i>, Review of Scientific Instruments, 93, 103502 (2022). 9. D. S. Hodge <i>et al.</i>, <i>Multi-frame, ultrafast, x-ray microscope for imaging shockwave dynamics</i>, Optics Express, 30, 21, 38422 (2022). 10. F. Treffert <i>et al.</i>, <i>High-repetition-rate, multi-MeV deuteron acceleration from converging heavy water microjets at laser intensities of 10^{21} W/cm²</i>, Applied Physics Letters, 121, 074104, (2022). 11. C. Bernert <i>et al.</i>, <i>Off-harmonic optical probing of high-intensity laser-plasma expansion dynamics in solid-density hydrogen jets</i>, Scientific Reports, 12, 7287 (2022). 	

12. L. B. Fletcher, **C. B. Curry** et al., *Investigation of hard x-ray emissions from terawatt laser-irradiated foils at the Matter in Extreme Conditions instrument of the Linac Coherent Light Source*, Journal of Instrumentation, **17**, T04004, (2022).
13. F. Treffert, **C. B. Curry** et al., *Towards High Repetition-Rate Fast Neutron Sources using Novel Enabling Technologies*, Instruments, Instruments **5**(4), 38 (2021).
14. L. Gauss et al., *Probing ultrafast laser plasma processes inside solids with resonant small angle X-ray scattering*, Physical Review Research, **3**, 043194, (2021).
15. Z. Chen et al., *Observation of a highly conductive warm dense state of water with ultrafast pump-probe free-electron-laser measurements*, Matter and Radiation at Extremes, **6**, 054401 (2021).
16. Z. Chen et al., *Ultrafast Multi-cycle Terahertz Measurements of the Electrical Conductivity in Strongly Excited Solids*, Nature Communications, **12**, 1638 (2021).
17. H. Sawada et al., *2D Monochromatic X-ray Imaging for Beam Monitoring of an X-ray Free Electron laser and a High-Power Femtosecond laser*, Review of Scientific Instruments, **92**, 013510 (2021).
18. **C. B. Curry**, C. Schoenwaelder, et al., *Cryogenic Liquid Jets for High Repetition Rate Discovery Science*, Journal of Visualized Experiments, **159**, e61130, (2020).
19. **C. B. Curry** et al., *Optimization of radiochromic film stacks to diagnose high-flux laser-accelerated proton beams*, Review of Scientific Instruments, **91**, 093303 (2020).
20. M. Frost, **C. B. Curry**, and S. H. Glenzer, *Laser Cutting Apparatus for High Energy Density and Diamond Anvil Cell Science*, Journal of Instrumentation, **15**, P05004, (2020).
21. K. Bhutwala et al., *Development of a platform at the Matter in Extreme Conditions end station for characterization of matter heated by intense laser-accelerated protons*, IEEE Transactions on Plasma Science, **48**, 8, (2020).
22. J. D. Koralek et al., *Generation of ultrathin free-flowing liquid sheets for FEL sample delivery*, Proc. SPIE **1038**, X-Ray Free-Electron Lasers: Advances in Source Development and Instrumentation V, (2019).
23. G. D. Glenn et al., *Improved large-energy-range magnetic electron-positron spectrometer for experiments with the Texas Petawatt Laser*, Journal of Instrumentation, **14**, P03012, (2019).
24. L. Obst-Huebl et al., *All-optical structuring of laser-driven proton beam profiles*, Nature Communications, **9**, 5292, (2018).
25. E. E. McBride et al., *Setup for meV-resolution inelastic X-ray scattering measurements at the Matter in Extreme Conditions Endstation at the LCLS*. Review of Scientific Instruments, **89**, 10F104 (2018).
26. T. Ziegler et al., *Optical probing of high intensity laser interaction with micron-sized cryogenic hydrogen jets*. Plasma Physics and Controlled Fusion, **60**, 7, (2018).
27. J. D. Koralek et al., *Generation of ultrathin free-flowing liquid sheets*, Nature Communications, **9**, 1353, (2018).
28. L. Obst et al., *Efficient laser-driven proton acceleration from cylindrical and planar cryogenic hydrogen jets*. Scientific Reports **7**, 10248, (2017).
29. M. Gauthier, **C. B. Curry** et al., *High Repetition Rate, Multi-MeV Proton Source from Cryogenic Hydrogen Jets*, Applied Physics Letters, **111**, 114102, (2017).
30. M. Gauthier et al., *High-intensity laser-accelerated ion beam produced from cryogenic micro-jet target*. Review of Scientific Instruments, **87**, 11D827, (2016).
31. S. H. Glenzer et al., *Matter under extreme conditions experiments at the Linac Coherent Light Source*, Journal of Physics B, **49**, 9, (2016).
32. Z. Chen et al., *A Single-shot Spatial Chirp Method for Measuring Initial AC Conductivity Evolution of Femtosecond Laser Pulse Excited Warm Matter*, Review of Scientific Instruments **87**, 11E548, (2016).

Other
Publications

1. J. J. Rocca, F. Legare, et al., *LaserNetUS – Research Opportunities in IFE*, IFE Science & Technology Community Strategic Planning Workshop, (2022).
2. G. M. Dyer et al., *Opportunities for an Inertial Fusion Energy Program within the context of the Matter in Extreme Conditions Upgrade Project*, IFE Science & Technology Community Strategic Planning Workshop, (2022).

3. P. Heuer et al., *Accelerating the science, technology, and workforce base for Inertial Fusion Energy (IFE)*, IFE Science & Technology Community Strategic Planning Workshop, (2022).
4. D. A. Mariscal et al., *Accelerated Scientific Discovery with AI-driven Experiments in support of IFE*, IFE Science & Technology Community Strategic Planning Workshop, (2022).
5. G. M. Dyer, A. Fry et al., *Matter in Extreme Conditions Upgrade Conceptual Design Report*, (2021).
6. T. Ma et al., *Frontier HED Science on the SLAC LCLS MEC Experimental End Station*, NAS Plasma 2020 Decadal Assessment, (2019).
7. T. Ma et al., *Advancing High Energy Density Science with High Intensity Short Pulse Lasers*, NAS Plasma 2020 Decadal Assessment, (2019).

In Review
Publications

1. H. Sawada et al., *Dynamics of a solid density plasma creation by high-power femtosecond laser-generated relativistic electrons*, Nature Communications, (in review).
2. A. Ziefuß et al., *Inorganic anions linearly tune the electron-phonon coupling time of colloidal gold nanoparticles*, Nature Communications, (in review).

In Preparation
Publications

1. **C. B. Curry et al.**, *Demonstration of high-peak brightness proton and deuteron beam from near-critical density laser plasma interactions*, Nature Communications, (in preparation).
2. **C. B. Curry et al.**, *Beam-splitting plasma mirror producing high-contrast, collinear 100-TW laser pulses*, Optics Letters, (in preparation).
3. M. Gauthier, **C. B. Curry et al.**, *Predicting laser-accelerated proton beam deflections through Weibel filaments in near-critical density laser plasma interactions*, Plasma Physics and Controlled Fusion, (in preparation).
4. M. Rehwald et al., *Generation and characterization of sheet jets produced from liquid hydrogen*, Scientific Reports, (in preparation).
5. C. Schoenwaelder et al., *Cryogenic Liquid Neon Jets for High-Repetition-Rate Laser-Plasma Experiments*, Review of Scientific Instruments, (in preparation).
6. F. Treffert et al., *Validating an Americium-241 Thomson parabola microchannel plate calibration method*, Review of Scientific Instruments, (in preparation).
7. H. Sawada et al., *Creation of Fermi degenerate plasma by laser-driven relativistic electrons*, (in preparation).

Oral
Presentations

1. **2023 Advanced Laser Light Source (ALLS) User Workshop** **09/07/2023**
St. Sauveur, QC, Canada
Invited Oral: LaserNetUS: Driving Innovation in High- Power Laser Science and Applications
2. **2023 High Energy Density Science Summer School** **07/21/2023**
La Jolla, CA, United States
Lecture: Research Proposals in HED Science: Focusing on experimental work at the high-power laser facilities of LaserNetUS
3. **2023 Annual Directed Energy Science and Technology Symposium** **04/06/2023**
San Antonio, TX, United States
Invited Oral: Fostering Collaboration and Expanding Access to High-Power Laser Facilities: An Overview of LaserNetUS
4. **NIF and JLF User Group Meeting 2023** **02/21/2023**
Livermore, CA, United States
Contributed Oral: LaserNetUS: Harnessing the Power of Collaboration for Cutting-Edge Research and Workforce Development
5. **2023 Stewardship Science Academic Programs (SSAP) Symposium** **02/14/2023**
Santa Fe, NM, United States
Invited Oral: LaserNetUS: A network of high-power laser facilities
6. **Fusion Power Associates 43rd Annual Meeting and Symposium** **12/08/2022**
Washington D.C., United States
Invited Oral: The Role of Mid-Scale Laser Facilities in addressing the Science & Technology Challenges of Inertial Fusion Energy

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| 7. | Ultrafast from Coast to Coast:
Seminars of the Canadian Ultrafast Community
Virtual Event hosted by the Institut national de la recherche scientifique (INRS)
<i>Invited Seminar: LaserNetUS: A network of high-power laser facilities across North America</i> | 11/10/2022 |
| 8. | Workshop on Plasma Science Facility Networks
College Park, MD, United States
<i>Invited Oral: LaserNetUS: A network of high-power laser facilities</i> | 06/13/2022 |
| 9. | 49th IEEE International Conference on Plasma Science (ICOPS)
Seattle, WA, United States
<i>Invited Oral: The Matter in Extreme Conditions Upgrade Project – Towards High Repetition Rate HED Science</i> | 05/25/2022 |
| 10. | 49th IEEE International Conference on Plasma Science (ICOPS)
Seattle, WA, United States
<i>Contributed Oral: LaserNetUS: A network of high-power laser facilities</i> | 05/24/2022 |
| 11. | High-Intensity Lasers and High-Field Phenomena (HILAS) 2022
Hybrid Meeting, Budapest, Hungary
<i>Invited Oral: LaserNetUS: Advancing the Frontiers of High-Power Laser Science and Applications</i> | 03/25/2022 |
| 12. | Geological Sciences, Stanford Earth, Stanford University
Hybrid Meeting, Stanford, CA, United States
<i>Invited Guest Lecture: Laser-driven Ion Acceleration from Cryogenic Low-Z Jets</i> | 11/16/2021 |
| 13. | 63rd Annual Meeting of the APS Division of Plasma Physics
Pittsburgh, PA, United States
<i>Contributed Oral: Towards high-repetition rate HED science at the MEC instrument at LCLS</i> | 11/09/2021 |
| 14. | 2021 LaserNetUS User Meeting
Virtual Meeting
<i>Contributed Oral: Exploring petawatt laser-driven ion acceleration in near-critical density plasmas</i> | 08/19/2021 |
| 15. | Ultrafast from Coast to Coast:
Seminars of the Canadian Ultrafast Community
Virtual Event hosted by the Institut national de la recherche scientifique (INRS)
<i>Invited Seminar: Shrinking particle accelerators with petawatt lasers</i> | 07/08/2021 |
| 16. | 62nd Annual Meeting of the APS Division of Plasma Physics
Virtual Meeting
<i>Contributed Oral: Towards hybrid particle accelerators with bright laser-driven ion beams from cryogenic low-Z jets</i> | 11/11/2020 |
| 17. | Super-Intense Laser-Atom Physics (SILAP) 2018
Toronto, ON, Canada
<i>Contributed Oral: Coupling cryogenic low-Z jets with ultra-intense lasers to observe novel effects induced by relativistic transparency</i> | 12/13/2018 |
| 18. | European XFEL User Meeting Satellite Meeting:
First experiments with a high-intensity short-pulse laser at HED/HIBEF
Schenefeld, Germany
<i>Invited Oral: Overview of short-pulse laser experiments at LCLS</i> | 01/27/2020 |
| 19. | 6th International Conference of the International Committee on Ultrahigh Intensity Lasers (ICUIL)
Lindau, Germany
<i>Contributed Oral: High-flux neutron generation from planar cryogenic deuterium jets</i> | 10/12/2018 |
| 20. | 6th International Conference on High Energy Density Physics
Shirahama, Japan
<i>Contributed Oral: Advanced Proton Acceleration from Cryogenic Hydrogen Jets</i> | 06/07/2017 |

	21. 43rd IEEE International Conference on Plasma Science (ICOPS) Banff, AB, Canada <i>Contributed Oral: Deflection of Laser Accelerated Protons due to Self-Generated Magnetic Fields</i>	06/21/2016
	22. 2016 Annual Canadian Association of Physicists (CAP) Congress Ottawa, ON, Canada <i>Contributed Oral: Deflection of Laser Accelerated Protons due to Self-Generated Magnetic Fields</i>	06/14/2016
	23. National Ignition Facility and Jupiter Laser Facility User Meeting Livermore, CA, United States <i>Invited Oral: Laser Driven Proton Acceleration from Cryogenic Hydrogen Jets</i>	02/02/2016
	24. 57th Annual Meeting of the APS Division of Plasma Physics Savannah, GA, United States <i>Contributed Oral: Spectral Features in Laser Driven Proton Acceleration from Solid-density Hydrogen Jets</i>	11/17/2015
Poster Presentations	1. 6th High-Power Laser Workshop Menlo Park, CA, United States <i>Contributed Poster: Laser-driven ion acceleration from cryogenic low-Z jets</i>	09/25/2018
	2. National Ignition Facility and Jupiter Laser Facility User Meeting Livermore, CA, United States <i>Contributed Poster: Advances in liquid sheet jets for High Energy Density Experiments</i>	02/07/2018
	3. 2017 International Workshop on Warm Dense Matter (IWWDM) Vancouver, BC, Canada <i>Contributed Poster: High-repetition rate AC conductivity measurements of isochorically heated water</i>	04/11/2017
	4. 2016 High Energy Density Laboratory Astrophysics (HEDLA) Menlo Park, CA, United States <i>Contributed Poster: Collisionless Shockwave Acceleration from Cryogenic Hydrogen Jets</i>	05/17/2016
	5. 2016 Advances in Free-electron Laser Science Workshop of the Peter Paul Ewald Fellows, Menlo Park, CA, United States <i>Contributed Poster: Magnetic field amplification and ion acceleration in solid hydrogen</i>	04/14/2016
	6. 2015 International Workshop on Radiation from High Energy Density Plasmas (RHEDP) Lake Tahoe, NV, United States <i>Contributed Poster: Characterization of Non-equilibrium Warm Dense Gold using Optical and THz Probing Techniques</i>	06/10/2015
Media Coverage	- Angela Anderson, SLAC National Accelerator Laboratory <i>Renewed support for high power laser facilities will benefit discovery science and inertial fusion energy research at SLAC</i>	10/26/2023
	- All Things Photonics, Photonics Media <i>The LaserNetUS Consortium – A Podcast of High Intensity with Chandra Breanne Curry</i>	04/26/2022
	- Geoff McMaster, Folio, University of Alberta <i>High power, high potential</i>	04/04/2022
	- Ali Sundermier, SLAC National Accelerator Laboratory <i>Laser-focused: Chandra Breanne Curry appointed first LaserNetUS coordinator</i>	12/08/2021
	- Glenda Chui, SLAC National Accelerator Laboratory <i>X-Ray Scientists Create Tiny, Super-Thin Sheets of Flowing Water that Shimmer Like Soap Bubbles</i>	04/26/2018

Memberships & Affiliations

- American Physical Society – Division of Plasma Physics (APS-DPP)
- Canadian Association of Physicists – Division of Plasma Physics (CAP-DPP)
- Institute of Electrical and Electronics Engineers (IEEE)
- Society of Photo-Optical Instrumentation Engineers (SPIE)
- High Energy Density Science Association (HEDSA)
- Society of Women Engineers (SWE)
- Fusion Energy Council of Canada (FECC)

Experiment Participation

SLAC National Accelerator Laboratory, Menlo Park, CA, United States
Matter in Extreme Conditions (MEC) Instrument at the Linac Coherent Light Source (LCLS)

Experiment Details	Principal Investigator(s)	Year
200 TW laser commissioning experiment	Z. Xing, E. Granados	2015
LJ43: Visualizing the development of Weibel instabilities in relativistic counterstreaming plasmas	F. Fiuza, W. Schumacher, C. Roedel	2015
LQ85: Measurement of the transport properties of warm dense methane	S. H. Glenzer, T. White, E. E. McBride	2017
MEC 25 TW short pulse laser commissioning	E. C. Galtier	2018
LQ91: Study Of Proton Stopping and Energy Deposition in Warm Dense Matter	F. Beg, C. McGuffey, M. Bailly-Grandvaux	2018
LS64: In Situ X-ray Diffraction from Isochoric Proton-heated Warm Dense Silica	E. E. McBride, M. Gauthier	2018
LT46: First femtosecond time-resolved measurements of short-pulse laser isochoric heating	H. Sawada	2018
LT94: Probing of Complex Ultra-Intense Laser-Plasma Interaction and Ionization with RCXD	T. Kluge, M. Roedel	2018
LV08: Void collapse physics in ICF ablator materials	A. E. Gleason	2020
LU94: Developing Direct Measurements of Electron and Ion Temperatures of Warm Dense Matter	E. E. McBride	2021
LX35: Visualizing the dynamics of hole boring with X-ray imaging at high repetition rate	M. Gauthier	2021

Lawrence Livermore National Laboratory, Livermore, CA, United States
Titan Target Area at the Jupiter Laser Facility

Experiment Details	Principal Investigator(s)	Year
Proton acceleration in high intensity laser plasma interactions from liquid hydrogen targets	C. Roedel, M. Gauthier, S. Goede	2015
Proton acceleration in high intensity laser plasma interactions from a cryogenic hydrogen jet (cont.)	M. Gauthier	2016
Searching for signatures of relativistic magnetic reconnection in multi-beam high-intensity laser plasma interactions	C. B. Curry	2018

Lawrence Livermore National Laboratory, Livermore, CA, United States
National Ignition Facility

Experiment Details	Principal Investigator(s)	Year
TNSA Proton Acceleration with NIF ARC	T. Ma, D. Mariscal	2018

Deutsches Elektronen-Synchrotron (DESY), Hamburg, Germany
Beam Line 3 (BL3) at Free Electron Laser in Hamburg (FLASH)

Experiment Details	Principal Investigator(s)	Year
Electron kinetics in Warm Dense Gold	A. Ng, Z. Chen	2015
Electron kinetics in Warm Dense Gold (cont.)	A. Ng, Z. Chen	2016
Exploring the electrical and thermal properties of water isochorically heated by FLASH	Z. Chen, J. B. Kim	2016
Exploring the electrical and thermal properties of alcohol mixtures isochorically heated by FLASH	Z. Chen, C. B. Curry	2017
DC Conductivity Measurements of Warm Dense Matter	Z. Chen, S. H. Glenzer	2018

University of Texas at Austin, Austin, TX, United States
Target Chamber 1 (TC1) in the Texas Petawatt Laser Facility

Experiment Details	Principal Investigator(s)	Year
Proton acceleration in high intensity laser plasma interactions from a cryogenic-hydrogen jet at the Texas Petawatt Laser	S. H. Glenzer, B. M. Hegelich	2016
Enhanced Sheath Field proton acceleration from cryogenic-hydrogen jets in the Relativistic Transparency regime	S. H. Glenzer	2017
LaserNetUS: Ultra-high flux ion acceleration and neutron generation from cryogenic jets with the Texas Petawatt Laser	M. Gauthier, C. B. Curry , F. Treffert	2019
LaserNetUS K35: Time-resolved magnetic field topology in ultra-high intensity laser plasma interactions	C. B. Curry	2019

HZDR – Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany
DRACO 100 TW/1 PW Laser Short Focal Length Bunker

Experiment Details	Principal Investigator(s)	Year
Laser-Driven Ion-acceleration from Cryogenic Jets	K. Zeil, S. Goede, C. Roedel	2016
All-optical structuring of laser-driven proton beam profiles	K. Zeil, L. Obst-Heubl	2018
Off-harmonic optical probing of high intensity laser plasma expansion dynamics in solid density hydrogen jets	K. Zeil, C. Bernert	2019
Cryogenic jet development and Laser-driven ion acceleration from cryogenic hydrogen jets tailored to near-critical density	K. Zeil, M. Rehwald, S. Goede	2019

SPring-8 Angstrom Compact free electron LAser (SACLA), Harima Science Garden City, Japan
Experimental Hutch 6 (EC6)

Experiment Details	Principal Investigator(s)	Year
Ultrafast transient x-ray imaging of non-equilibrium high energy density plasmas	H. Sawada	2019
Ultrafast transient x-ray imaging of non-equilibrium high energy density plasmas, (cont.)	H. Sawada	2021

Colorado State University, Fort Collins, CO, United States
Advanced Beam Laboratory

Experiment Details	Principal Investigator(s)	Year
Development of a high-repetition rate, bright neutron source utilizing a gas-accelerated heavy water microjet	F. Treffert, M. Gauthier	2021
High repetition-rate, quasi-directional fast neutron source using converging D ₂ O microjets	F. Treffert	2023

Rutherford Appleton Laboratory (RAL), Didcot, United Kingdom
Gemini Laser Facility

Experiment Details	Principal Investigator(s)	Year
Target Area 2 (TA2): Characterisation of growth rate and spectrum of hot electron filamentation in solid density plasma using large data sets	C. A. J. Palmer	2021
Vulcan Petawatt: Energetic proton beam collimation in long scale length plasmas	C. A. J. Palmer	2022